

Notes on egg morphology of *Amphipyra okinawensis* and comparative egg size of eight species of Japanese *Amphipyra* (Lepidoptera : Noctuidae)

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Abstract The egg morphology of *Amphipyra okinawensis* was described. The relationship between egg diameter and forewing length was examined for eight species of Japanese *Amphipyra*.

Key words *Amphipyra*, *Amphipyra okinawensis*, egg morphology, forewing length.

Materials and methods

The eggs of *A. okinawensis* used in this study were deposited by female moths collected at Kunigami, Aha, in Okinawa Pref. on December 1, 1994 (Fig. 1). These moths were individually reared in glass cases (10 cm in height, 9.5 cm in diameter) with filter paper so as to exclude moisture and about 10% muscovado sugar solution was supplied as food. The number of eggs laid by them was counted and their diameters were measured. The forewing length was measured as an indicator for the adult size. Other samples of *Amphipyra* used here were captured in Gifu Pref., central Japan.

Results and discussion

1. The egg size of *A. okinawensis*

The egg diameter of *A. okinawensis* was $776.1 \pm 9.20 \mu\text{m}$ ($n=55$) and height was $583.1 \mu\text{m}$. It is as large as *A. pyramidea* ($742.1 \mu\text{m}$ in diameter) and *A. sp* (= *subrigua* auct.) ($802.9 \mu\text{m}$ in diameter). The ratio (permillage) of egg diameter to forewing length of *A. okinawensis* was larger than in *A. monolitha* and *A. pyramidea*, and it was smaller than in other five species of this genus examined in the previous studies (Funakoshi, 1984, 1989,

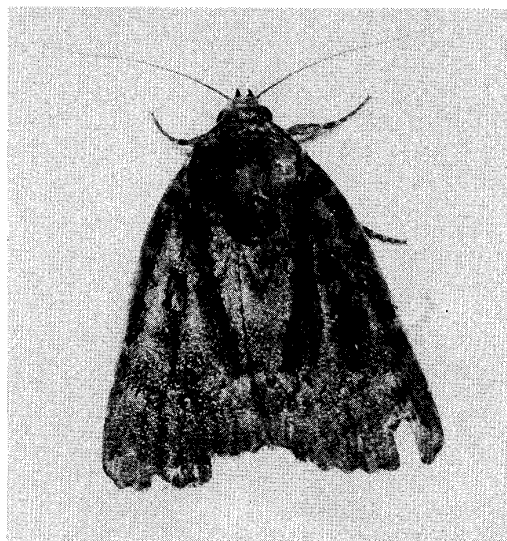


Fig. 1. The female of *Amphipyra okinawensis* laying eggs.

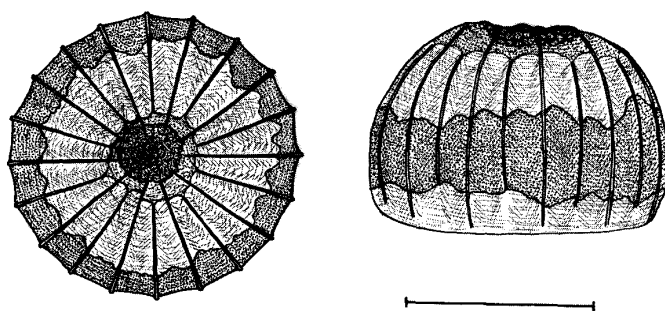


Fig. 2. Egg of *Amphipyra okinawensis* (Left: frontal view; Right: lateral view) (scale: 0.5 mm).

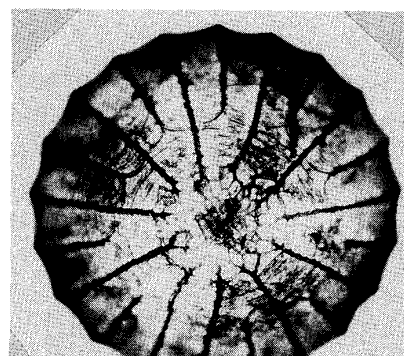


Fig. 3. The sculpture around micropyle.

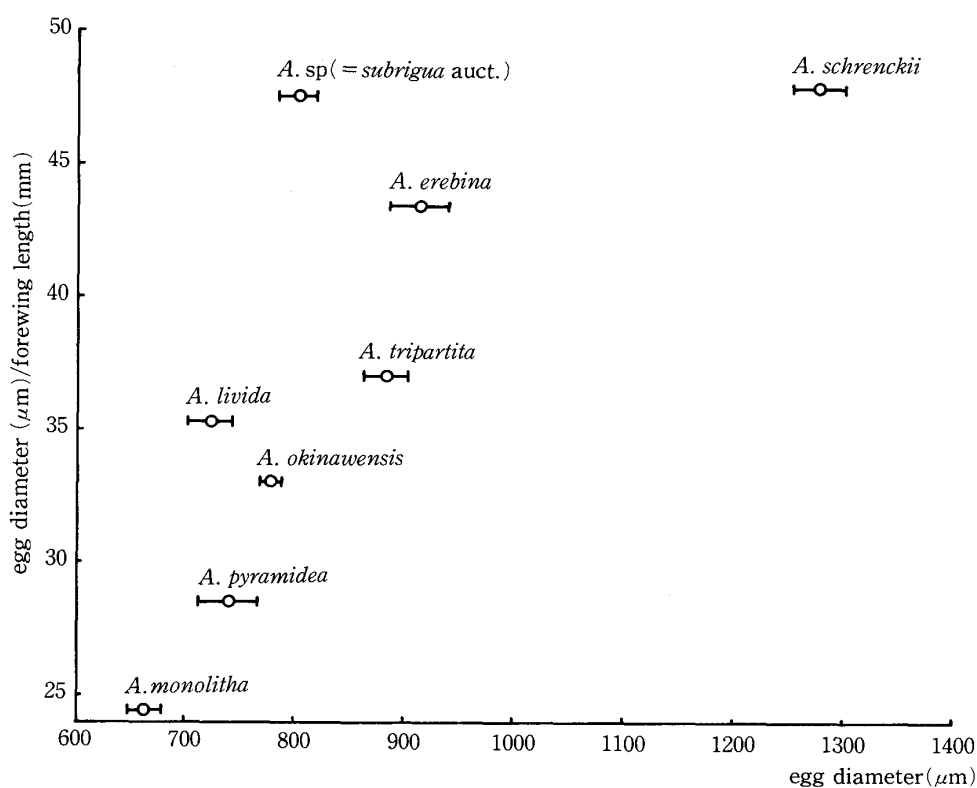


Fig. 4. The relationship between egg diameter and forewing length of 8 Japanese *Amphipyra* species.

1992).

2. The egg morphology of *A. okinawensis*

In the egg morphology of *A. okinawensis* clear differences from that of *A. pyramidea* and *A. monolitha* were recognized. The number of stripe lines from top to bottom was 19–21 (19=34%, 20=54%, 21=12%) in *A. okinawensis*, while it was mainly 33 in *A. pyramidea* and 31 in *A. monolitha*. The egg of *A. okinawensis* was dark fuscous around micropyle and bottom and the other area was light yellowish brown. Such a characteristic was recognized in *A. monolitha*. The sculpture around the micropyle was irregularly arranged and different from that of other *Amphipyra* species (Figs 2, 3).

3. The relationship between egg diameter and forewing length

Fig. 4 shows the relationship between egg diameter and forewing length of 8 Japanese *Amphipyra* species. Egg diameter/forewing length of *A. okinawensis* was 33.7 $\mu\text{m}/\text{mm}$. The value was a smaller one following *A. pyramidea* and *A. monolitha*. It is suggested that the fecundity in *A. okinawensis* is like in *A. pyramidea* and *A. monolitha*.

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摘 要

クロシマカラスヨトウの卵形態と日本産 *Amphipyra* 属 8 種の卵サイズの比較 (船越進太郎)

クロシマカラスヨトウ *Amphipyra okinawensis* Sugi の卵形態を記載するとともに日本産 8 種の卵の直径と成虫の前翅長との関係を比較した。その結果、クロシマカラスヨトウの卵の直径は 776.1 μm 、卵の高さは 583.1 μm であり、この属の中では比較的小さな卵であった。卵には精孔部周辺から 19-21 本の縦隆起線が放射状に広がるが、シマカラスヨトウの 33 本、オオシマカラスヨトウの 31 本に比べると少なく、線の間隔は開いていた。卵は黄褐色の地色に上部と側面下部が円状に暗褐色となり、この卵斑紋様はオオシマカラスヨトウの卵と似ていた。精孔部付近の卵弁の形は不規則で他の種と異なる特徴を示した。卵の直径/成虫の前翅長 ($\mu\text{m}/\text{mm}$) を求めたところ、クロシマカラスヨトウは 33.7 となり、オオシマカラスヨトウ 24.4、シマカラスヨトウ 28.5 に次いで小さな値となった。このことから、クロシマカラスヨトウはオオシマカラスヨトウ、シマカラスヨトウとよく似た卵の生産力をもつと推定された。

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